

WEST

 Generate Collection Print

L6: Entry 6 of 11

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TITLE: Method for deleting objects on a computer display

Brief Summary Text (12):

In a preferred embodiment of the invention, the selected object determining step includes the substep of determining whether any objects were preselected at the time the scrub gesture was made. When no suitable objects are preselected, a determination is made as to whether the scrub gesture substantially overlaps a displayed object. If a displayed object is substantially overlapped, it is selected for deletion. In a further preferred embodiment, substantial overlap is found when the area of a bounding box that encompasses the stroke is compared to the area of a second bounding box that encompasses a specific displayed object. Specifically, the stroke is considered to substantially overlap an object if the bounding box of the stroke covers more than a predetermined percentage of the bounding box of the object. In a still further preferred aspect of the selection step, objects displayed on the screen are checked in descending order of priority, wherein if an object on a given level of priority is determined to be substantially overlapped, objects having lower levels of priority will not be checked for substantial overlap.

Detailed Description Text (27):

A suitable method for determining substantial overlap is to look at a rectilinear "bounding box" (STROKE BOUNDS) that encloses the stroke that forms the scrub gesture and determining whether it substantially overlaps a rectilinear bounding box (OBJECT BOUNDS) of an object displayed on the screen. The amount of overlap between the bounding boxes that is considered "substantial" may be set at a given percentage that is suitable in view of the needs of the system. A representative number that has been found to work well is an 80% overlap. That is, in the given example, substantial overlap occurs when the stroke's bounding box (STROKE BOUNDS) overlap at least 80% of the boundary of a given object (OBJECT BOUNDS). In an alternate (but not preferred) embodiment of the present invention, if the boundary box of the objects overlaps at least 80% of the stroke's bounding box (STROKE BOUNDS), this too will result in "substantial overlap." Of course, the actual percentage overlap may be varied in accordance with the needs of a particular system. Although there is no need to display the bounding boxes in practice, a representative bounding box 85 of a scrub gesture stroke is shown in FIG. 3(b) for the purposes of illustration.

Detailed Description Text (55):

Referring next to FIG. 11, the step 116 of determining whether a stroke has selected any objects will be described in more detail. Initially, in step 299, a level indicator is set to the group level as discussed in greater detail subsequently. Then in decision step 300, the logic determines whether the bounding box of the stroke (STROKE BOUNDS) substantially overlaps the bounding box of a given object (OBJECT BOUNDS). When checking for overlap, the logic will begin by checking the highest level objects. As indicated below, in the described embodiment, the highest level objects are groups, which may include both text and graphic material that have been grouped together by the user. Thus, the logic first checks to determine whether any object groups have been substantially overlapped by the scrub gesture.

Detailed Description Text (56):

Substantial overlap can be set at a given percentage overlap, as for example 80%. That is, in the given example, substantial overlap occurs when STROKE BOUNDS overlap at least 80% of the boundary of a given object, or if the boundary box of the objects overlaps at least 80% of STROKE BOUNDS. Of course, the actual percentage overlap may be widely varied in accordance with the needs of a particular system. If the result of the decision step 300 is that there is substantial overlap, then the object(s) that is/are

substantially overlapped by the scrub gesture will be selected in step 302 and deleted in step 115.

Detailed Description Text (59):

If there is no substantial overlap on the group level, then the logic checks the highest level of both textual and graphic information. As indicated above in the described embodiment, the highest level of textual information is the paragraph and the highest level of graphic information is the polygon. It is noted that the term polygon is a bit of a misnomer since as will be apparent to those skilled in the art of object oriented graphics software development, independent lines, circles and various other objects would each be considered a polygon for the purpose of this test. If one or more paragraphs and/or polygons are substantially overlapped by the bounding box of the scrub gesture, then those items will be selected in step 302 and then deleted in step 115. If the bounding box STROKE BOUNDS of the scrub gesture does not substantially overlap a paragraph or polygon, then in step 304, the logic determines that the object(s) can be decomposed into smaller objects, which in this case would be words for textual materials and segments for graphic items. Then the substantial overlapping step 300 is repeated looking at the words and segments.

CLAIMS:

11. A method as recited in claim 10, wherein in the overlap detecting step, the area of a first bounding box that encompasses the stroke is compared to the area of a second bounding box that encompasses a specific object, and the stroke is considered to substantially overlap an object if the bounding box of the stroke covers more than a predetermined percentage of the bounding box of the object.
12. A method as recited in claim 10, wherein in the overlap detecting step, the area of a first rectilinear bounding box that encompasses the stroke is compared to the area of a second rectilinear bounding box that encompasses a specific object, and the stroke is considered to substantially overlap an object if the bounding box of the object covers more than a predetermined percentage of the bounding box of the stroke.